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YALE UNIVERSITY
SCHOOL OF FORESTRY—Bulletin No. 5

THE DEN

A PRELIMINARY REPORT, WITH MAP, OF A TRACT
OF WOODLAND GIVEN TO THE SCHOOL BY
MR. AND MRS. WINTHROP PERRY

By

JAMES W. TOUMEY

Dean, and Professor of Silviculture

and

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Professor of Forestry, and Forester in Charge of the School Forests



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Monograph



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THE DEN

A PRELIMINARY REPORT, WITH MAP, OF A TRACT OF WOODLAND GIVEN TO THE SCHOOL BY MR. AND MRS. WINTHROP PERRY

In the autumn of 1918, through gift from Mr. and Mrs. Winthrop Perry, the School of Forestry came into possession of a number of closely connected parcels of woodland comprising over 1,300 acres in Fairfield County, Connecticut.

The purpose of the donors and conditions under which the gift was made are clearly stated in the following extracts from a letter from Mr. Perry to the Dean in October, 1918:

This is intended to express definitely and in writing our understanding with reference to the real estate interests we have been holding in the so-called "Devil's Den," chiefly in the town of Weston and partly in the town of Redding in this county.

Mrs. Perry and I understand that we have given as of October 1, 1918, to Yale University and its successors forever, for the benefit of that department of the University known as the Yale School of Forestry, to be held forever in trust for the practice and illustration there of the teachings and purposes of the School, but keeping and preserving always the natural attractions and so-called wild character of the lands, all of the joint and several real estate holdings and interests belonging to us or either of us, in the "Den"; that is, in the two towns mentioned between the highways known as the Weston-Georgetown highway on the west; the Knobb-Crook or Redding-Georgetown highway on the north; the old Dimon road and the Norwalk-Newton highway on the east and Godfrey Street on the south; subject, however, in every respect to the reservations, conditions, limitations, and further understandings herein expressed:

We reserve during the life of the survivor of the two of us, for our exclusive use, without impeachment for waste or any liability for damage of any kind, but with all control, rights and privileges of an owner in fee in every respect excepting only the right to affect by any transfer or otherwise the title to or possession of the land itself after the death of the survivor of the two of us,—the lands and interests roughly described as our present holdings there comprised in one tract

east of the westerly line of the lot bought by us from George E. Hazen in October, 1910, and of the westerly line of the forty-acre lot bought by us from Charles R. Morehouse in November, 1909; north of the Morehouse farm lands; west of the Norwalk-Newton highway and old Dimon road and south of the northerly line of the tract bought by us from Edgar B. Perry in October, 1910, in part and thence south of the Weston-Redding town line.

Reserving also the right similarly to hold and use during the same term and further term, if any, of the life of Wilbur F. Smith, now Deputy Game Warden of this county, one tract of not over ten acres within our above reservation or near the same on the northwesterly corner or in Redding near the Weston-Redding town line on the north, as we may elect.

Reserving also the layout of the substitute highway and all rights and privileges incidental to building the same where it is soon to be built north of the Weston-Redding town line, as located and made by the Bridgeport Hydraulic Company in the necessary rearrangement of the highways on the westerly side of its proposed Valley Forge reservoir; and also reserving the right to permit and authorize such layout and construction as to any lands hereby transferred without any cost to or liability of that Company on account of the land needed therefor or for building the same on account of any change of grade of any part of the old Dimon road or any flooding of any of our present holdings anywhere by such proposed reservoir.

Any buildings and all customary furnishings and equipment thereof belonging to either of us and being at the death of the survivor of the two, upon any part of any reservation for our lives hereunder, are to be deemed to pass with the lands to the University upon the termination of the reservation.

It is also understood that we will turn over to the University for the benefit of the School, fifty shares of the capital stock of the American Express Company, the net income to be used: First, in paying the taxes assessed upon the properties transferred, by the towns of Weston and Redding against the School or University, or if the lands are tax exempt while so held by the University, then one hundred dollars each year to the town of Weston to replace the tax thus lost.

This tract of woodland is within easy reach of New Haven and will be constantly increasing in value and importance. It places the School in admirable position as to forest ownership since it provides a large area of hardwoods to supplement the coniferous forest near Keene, New Hampshire.* It is to be noted that the gift of the forest carries with it a fund of \$5,000 as endowment. Furthermore, the donors generously provided the sum of \$1,000 to be used in surveying and mapping the property and in publishing this report.

*Toumey, J. W., and Hawley, R. C. The Keene Forest: a preliminary report. (School of Forestry, Yale University, Bulletin 4, 1916.)

Location of the Den

The parcels of woodland covered by the gift have an aggregate area of 1,341.3 acres of which 2.6 acres are water surface. They are situated, for the most part, in the town of Weston, about ten miles north of the city of South Norwalk and about the same distance northwest of Bridgeport. A small acreage is in the town of Redding.

Fairfield County is in the southwestern part of the state of Connecticut and borders Long Island Sound. Although that part of the county along the Sound and for some miles to the north is moderately level and fertile, the central portion is a region of irregular hills and deep valleys with a correspondingly small percentage of agricultural land. The "Devil's Den" is just south of the center of the county. The town of Weston, in the northern part of which most of it lies, is one of the most thinly populated towns in the county and one of those having the largest percentage of absolute forest land.

The name "Devil's Den" owes its origin to a peculiar marking in a large stone which bore a fanciful resemblance to a human footprint. Since it was much too large to have been made by man, it is said that the early settlers popularly ascribed its origin to the Devil.

Early Settlement and Uses

The lands in The Den were first granted as woodlots to farms lying to the south and near the Sound. The original survey lines were run a few degrees west of north and have long been known as "eleven o'clock" lines because their direction is that in which one's shadow falls at that hour in the forenoon. The original roads opening up the region were laid out along these lines at half-mile intervals. Due to the character of the survey, the original grants were in the form of rectangular strips, many times longer than broad, having their greatest dimension along the "eleven o'clock" lines. These so-called "Long Lots" extended from the Sound to the Redding line and were originally apportioned to the inhabitants of Fairfield in accordance with their wealth, Weston at that time being a part of the town of Fairfield. Although the original survey lines were straight, many of the old boundary demarkations have been shifted back and forth by owners until now the accepted boundaries of many of the lots exhibit various irregularities.

The Den has been little utilized for agricultural purposes. Wood and lumber, however, have been cut there from time to time for at least one hundred and fifty years. As early as 1700, the

shipping of lumber out of Fairfield County without official permission was prohibited owing to the rapid disappearance of the choice hardwoods, especially white oak. At that time the region now embraced in the town of Weston was inaccessible and unsettled. It was not until 1787 that the first town meeting was held in Weston. As the town of Weston is very stony and rough the first settlers obtained the greater part of their living from the forest.

At the outset only the best of timber, such as white oak and ash, was taken from The Den, but it was not long before the general cutting of the mixed hardwood forest for the manufacture of charcoal was well under way. This industry afforded the chief occupation for many years. They used the old type of open pits and found a ready market for their product in the shore towns and later at axe and other factories in the town of Weston.

During this time nearly all The Den was cut over at least once and some parts have been cut over several times. With the decline in the demand for charcoal soon after the Civil War, there followed a period during which but little cutting was done. Mixed stands of hardwood sprouts grew up with an occasional large tree left from the original cuttings.

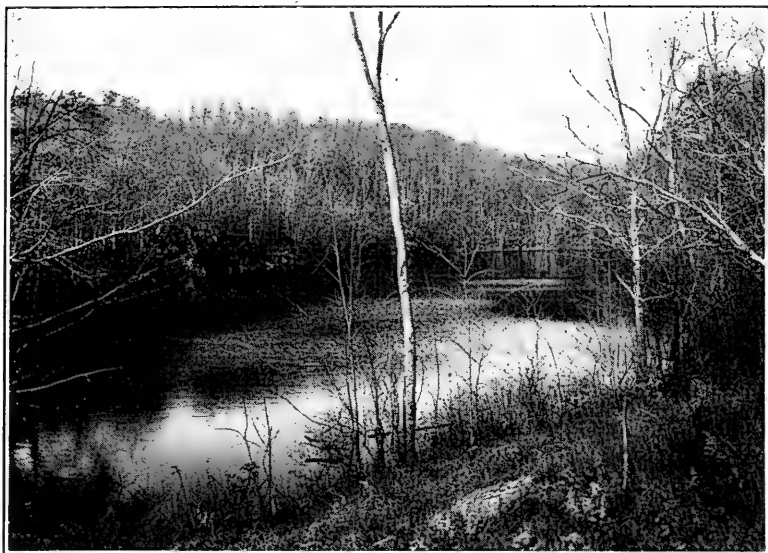
Since the advent of the portable sawmill, some thirty years ago, most of the wood large enough has been cut for lumber, poles and ties, although there are limited areas where no cutting of any kind has been done for from fifty to seventy years.

Records of from seventy to one hundred years ago show that The Den in those early days proved very attractive to huckleberry pickers who found large quantities of berries in many of the swamps.

There is evidence that The Den was a favorite rendezvous of the Indians even after settlements were established along the Sound. Many arrowheads and occasional tomahawks and stone pipes have been picked up by the settlers. Indian Spring at the foot of Raccoon Ledge is said to have derived its name from the fact that an Indian camp or small Indian village was located near by. Clams were brought from the Sound and cooked in a cave under the rocks of this ledge and large quantities of the broken shells are still in evidence in the soil about this cave.

Topography and Soil

The topography is hilly and rugged. Viewed from the highest point it appears as an uneven, broken country with no definite arrangement of hills and valleys. Drainage is into the west branch and main Saugatuck River, flowing south toward the Sound.



I. Sawmill pond on the south end of the property, showing the mixed hardwood stands typical of most parts of The Den.



II. The Kennel Lot, showing the forest after the removal of the chestnut.



Several streams, one of fair size, with belts of swamp on portions of their course cross the property in a general southerly direction.

The "Devil's Den" is entirely within the formation known as Thomaston granite-gneiss* and dikes of considerable extent and height are not uncommon there. The rock in this formation is metamorphic-igneous in origin and varies in structure from almost massive granite to distinctly schistose phases.

While the rocks underlying the surface soil vary considerably in texture and structure, some offering a greater resistance to weathering agencies than others, the resulting soil materials from all of them are very much the same. It appears that glaciation, instead of scouring off the original soil and depositing great depths of glacial débris or till, served rather to mix up the soil materials with rock fragments, leaving much of it in place. The upland soils, for the most part, bear a close relation to the underlying rock and are too stony for agriculture. Although the lower lying areas are more or less deeply covered with glacial débris, they are usually too stony for profitable tillage.

The soils of recent origin, namely, the muck accumulations of depressed swampy areas, are the only ones reasonably free from stones. Taken as a whole, the soil is a shallow loam of variable depth, due to the broken and rough topography.

Character of the Forest

The forest is second growth, heavily cut over, and consists of mixed hardwood sprouts. The early cuttings and those of the last half century for lumber, poles and ties, have left most parts of the present forest stocked with relatively small timber. Chestnut, until recently the most important species, has been practically exterminated by the blight. The oaks (red, chestnut and white) predominate and together with white ash and whitewood are the species of greatest future promise.

Gray birch and soft maple, both relatively inferior trees, are abundant and have increased with the removal of the more valuable species.

The forest may be separated into even-aged stands of from twenty up to eighty years. Nearly all of these stands show irregularities in age due to the death of the chestnut and to the culling out of the better trees for lumber and ties at different times during the last few decades. These irregularities in age are so common and so complex, as seen on the ground, that it was not possible in the time available to map the forest into distinct stands each

*Rice and Gregory: Manual of the Geology of Connecticut. Connecticut Geological and Historical Survey, Bulletin 6, 1906.

of a separate age. It was possible, however, to distinguish and map three cover types described as follows:

1. Hardwood type. Comprises all stands of mixed hardwoods on well-drained soils.

2. Swamp Hardwood type. Includes all stands of mixed hardwoods on poorly drained soils.

3. Old Field type. Contains the areas formerly cleared for cultivation or pasture but now seeding up to red cedar, gray birch and other hardwoods. Approximately 60 per cent of this type is not stocked with trees and is in need of planting. Many areas formerly cleared on which the reversion to a hardwood forest is complete, are now included in the hardwood type.

The following table shows the acreage of each type.

AREAS BY TYPES

Type	Acreage	Percentage
Hardwood.....	1,208.6	92.5
Old Field.....	46.8	3.6
Swamp Hardwood..	51.3	3.9
Total.....	1,306.7	100.0

Present Yield and Growth

Over most of the area there are comparatively few trees large enough for ties or lumber. Exceptions occur, as for example the 60-acre or Kennel lot, which has approximately 300,000 board feet of oak and other valuable hardwoods. While no careful estimate has been made, it is believed that there are approximately 12,000 cords of fuel wood and from one-half to three-quarters of a million board feet of ties and lumber now on the property. In spite of the numerous rocky ledges, surface boulders and swamps, the property as a whole is fair, average land for production of tree crops. It is estimated that the forest is growing at the average rate of 700 cords per year.

Management of the Property

A working plan for the property will be gradually developed. In the meantime the more essential requirements along the lines of organization and treatment are being undertaken.

The large amount of dead chestnut on portions of the tract made a salvage cutting the first necessity. Since the acquisition of the property in the autumn of 1918, approximately 375,000

board feet of chestnut lumber, ties and poles have been cut and sold. This amount is not included in the estimate previously made of the lumber now standing. Disposal of the dead and dying chestnut is not yet completed and tie hewers are still at work at this task.

When the tract was turned over by Mr. and Mrs. Perry it had never been surveyed in its entirety. Maps already existed for the portions to the northeast but it was necessary to find the lines in the field and survey the boundaries of the remainder. This was a difficult piece of work due to the number of interior holdings, the lack of previous surveys within recent years and uncertainty as to corners, as well as to the roughness and brushiness of the region surveyed.

The survey as finally completed and shown on the accompanying map has covered all but four lots included in The Den property. The four unsurveyed pieces are estimated at 32 acres as follows:

Carver lot, one to two miles southeast of the main holdings	15 acres.
Sterling, Belden and Bates lots, lying north of the Kennel lot, south of the State Farm and west of the main holdings	17 acres.

Work Planned for the Immediate Future

The four unsurveyed lots will be surveyed as soon as definite information can be secured as to the boundary corners.

The principal wood roads will be brushed out in order to facilitate passage through the property. At present many of these roads are so choked with brush as to be difficult to find and are almost impassable. Their opening will assist in protecting the forest from fire.

The principal corners will be permanently marked and the boundary lines where now unmarked will be blazed out and posted with notices.

The old field type covering 46.8 acres will be planted to red pine and white pine. This should be done at the earliest possible moment since brush is encroaching on the open land. The old field areas lying near the southeast corner are temporarily subject to a grazing privilege and cannot now be planted. Those on the 60-acre lot, amounting to 7.0 acres, and those on the road to the bungalow, aggregating 27.3 acres, should be planted within the next few years.

Cutting of chestnut will be pushed so far as it is profitable.

Beyond utilizing the chestnut, no cuttings are contemplated, inasmuch as the wood capital is already low and most of the timber is relatively young. It is considered advisable to allow the forest to grow and accumulate a larger wood capital.

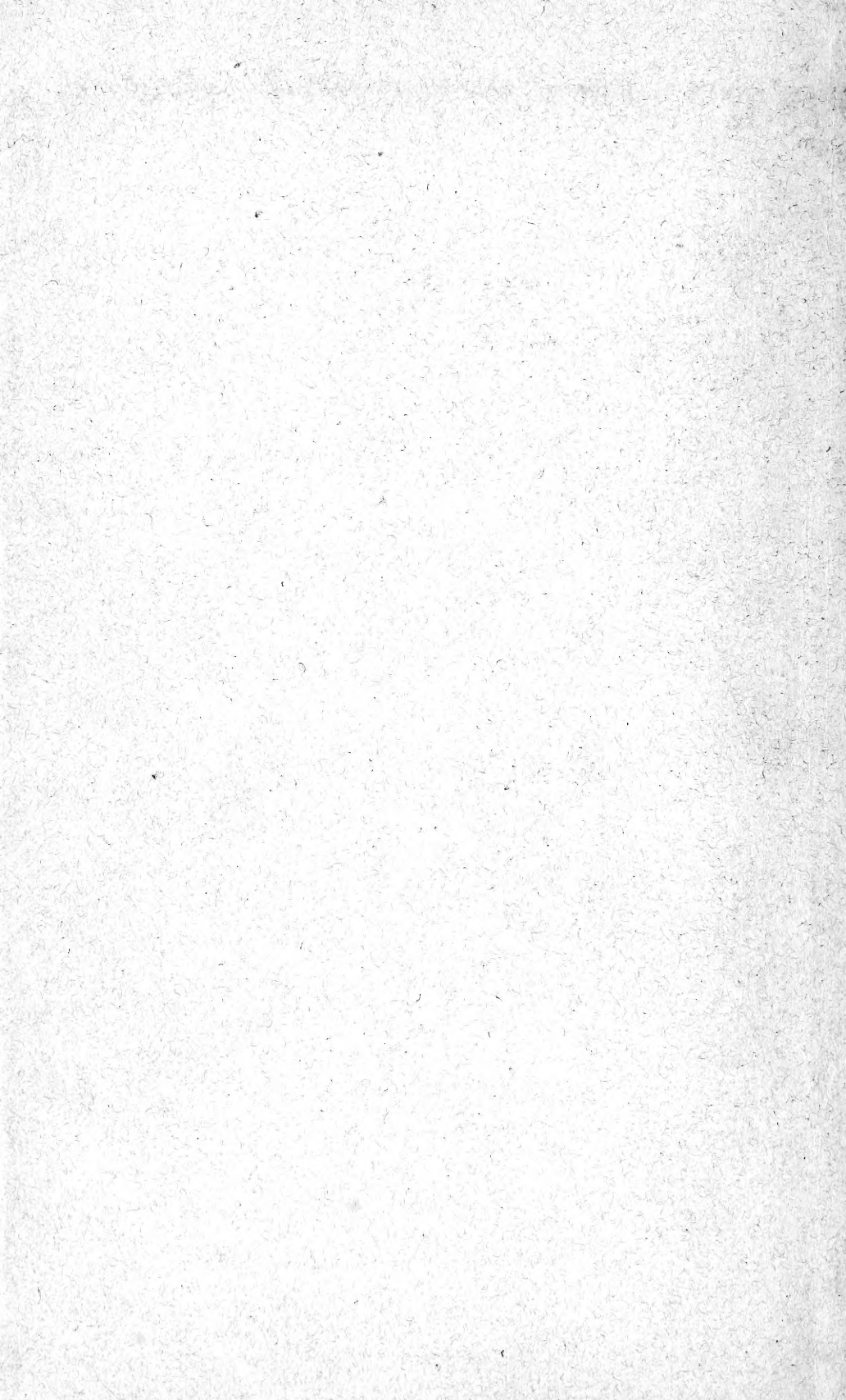
Eventually the strategic location of The Den, with respect to the surrounding farming areas, particularly on the south and west, and also to important industrial centers, should afford profitable markets for cordwood and other forest products as it becomes possible to remove them without impairing the natural attractiveness of the wild woodland.

LEGEND

HARDWOOD TYPE
SWAMP HARDWOOD TYPE
OLD FIELD
BOUNDARY OF UNIVERSITY LANDS
WOOD ROADS



MAP
SHOWING LOCATION OF THE
DEN LANDS
OWNED BY THE
SCHOOL OF FORESTRY-YALE UNIVERSITY
IN THE TOWNS OF
WESTON AND REDDING CONN
SCALE 1" = 800' DECEMBER 1912



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